

CLAIMS:

1. A circuit (1) for operation of a gas discharge lamp (3) with a switching transformer (2), which switching transformer comprises a switch (22), a converter inductor (24) and a control means (27) in a control loop (33) for measuring a lamp voltage and setting a desired power, characterized in that the switching transformer (2) comprises a second
5 control loop (80).
2. A circuit as claimed in claim 1, characterized in that the control loop (80) comprises a third inner control loop (81).
- 10 3. A circuit as claimed in claim 2, characterized in that the third inner control loop (81) comprises a computer circuit (83).
4. A circuit as claimed in claim 3, characterized in that the computer circuit (83) is controlled by a commutation signal.
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5. A circuit as claimed in claim 2, characterized in that the third inner control loop (81) comprises a memory (85).
6. A circuit as claimed in claim 1, characterized in that the second control loop
20 (80) comprises an integrating controller (82).
7. A circuit as claimed in claim 1, characterized in that the second control loop (80) comprises a measuring filter (5).
- 25 8. A measuring filter (5) for a circuit (1) for operation of a gas discharge lamp (3) with a switching transformer (2), which switching transformer comprises a switch (22), a converter inductor (24) and a control means (27), characterized in that the measuring filter (5) comprises two sample-and-hold stages (53, 56).

9. A measuring filter (5) as claimed in claim 8, characterized in that the measuring filter (5) comprises an adder (61).
10. A measuring filter (5) as claimed in claim 8, characterized in that the
5 measuring filter (5) is controlled by a clock signal (90).
11. A method for operation of a gas discharge lamp (3) with a switching transformer (2), which switching transformer comprises a switch (22), a converter inductor (24) and a control means (27) in a control loop (33) for measuring a lamp voltage and setting
10 a desired power, characterized by the following method steps:
- values of at least one operational datum (125, 128, 131) of the lamp (3) varying with time are measured continuously or discontinuously,
 - the measured operational data (125, 128, 131) is compared with calculated operational data,
 - 15 - parameters necessary for calculation are adjusted,
 - a duty factor of a supply current is selected in dependence on the adjusted parameters.
12. A method for operation of a gas discharge lamp (3) with a switching
20 transformer (2), which switching transformer comprises a switch (22), a converter inductor (24) and a control means (27) in a control loop (33) for measuring a lamp voltage and setting a desired power, characterized by the following method steps:
- values of at least one operational datum (125, 128, 131) of the lamp (3) varying with time are measured continuously or discontinuously,
 - 25 - the measured operational data (125, 128, 131) is compared with calculated operational data,
 - parameters necessary for calculation are adjusted,
 - a frequency of an alternating voltage or an alternating current is selected in dependence on the adjusted parameters.
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13. A method for operation of a gas discharge lamp (3) with a switching transformer (2), which switching transformer comprises a switch (22), a converter inductor (24) and a control means (27) in a control loop (33) for measuring a lamp voltage and setting a desired power, characterized by the following method steps:

- values of at least one operational datum (125, 128, 131) of the lamp (3) varying with time are measured continuously or discontinuously,
 - the measured operational data (125, 128, 131) is compared with calculated operational data,
 - 5 - parameters necessary for calculation are adjusted,
 - a value of a supply current is selected in dependence on the adjusted parameters.
14. A method as claimed in any one of claims 11 to 13, characterized in that
10 initially set parameters are parameters of a new lamp (3).
15. A method as claimed in any one of claims 11 to 14, characterized in that the parameters are storable in a memory (85).
- 15 16. A method as claimed in any one of claims 11 to 15, characterized in that in steady-state operation the parameters inside the memory (85) are exactly those of the connected lamp (3).
- 20 17. A circuit (1) for operation of a gas discharge lamp (3) with a switching transformer (2), which switching transformer comprises a switch (22), a converter inductor (24) and a control means (27) in a control loop (33) for measuring a lamp voltage and setting a desired power, characterized in that the switching transformer (2) comprises an inner control loop (81).
- 25 18. A data and video projector having a circuit as claimed in any one of claims 1 to 7 or 17.
- 30 19. A data and video projector having a circuit for implementing a method as claimed in any one of claims 11 to 16.